

Fig. 1

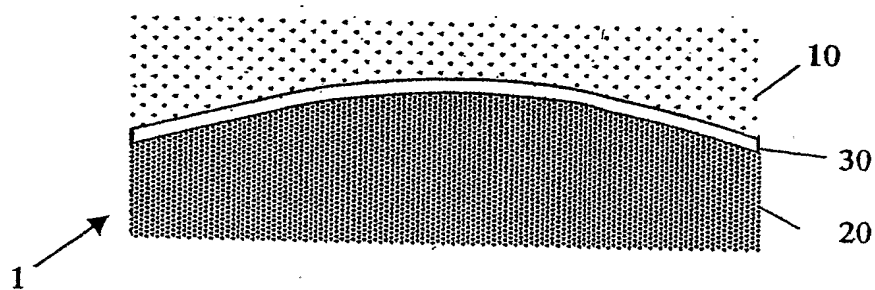


Fig. 2a

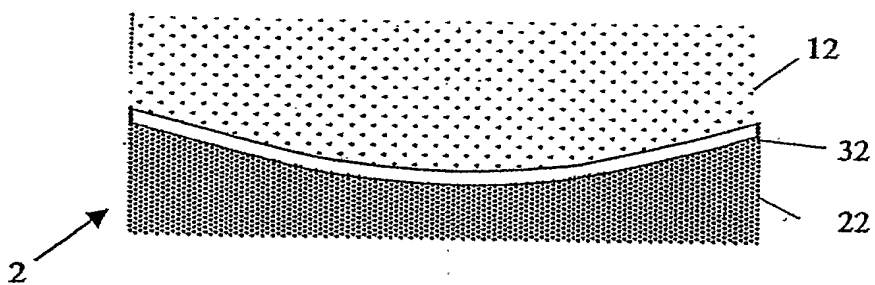


Fig. 2b

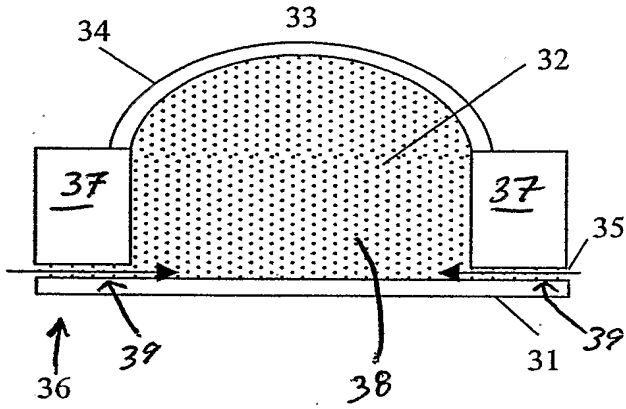


Fig. 3a

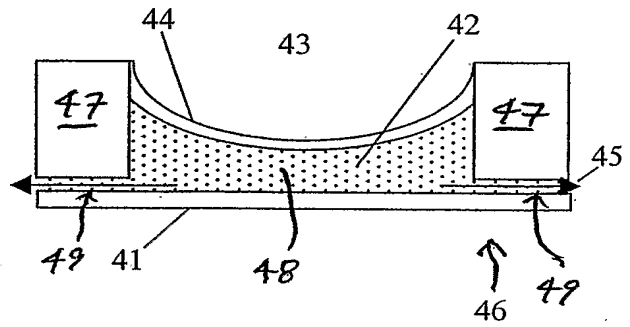


Fig. 3b

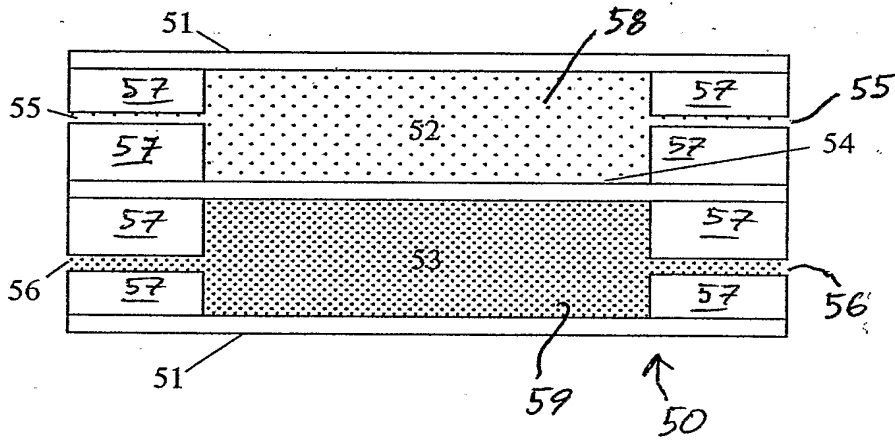


Fig. 4a

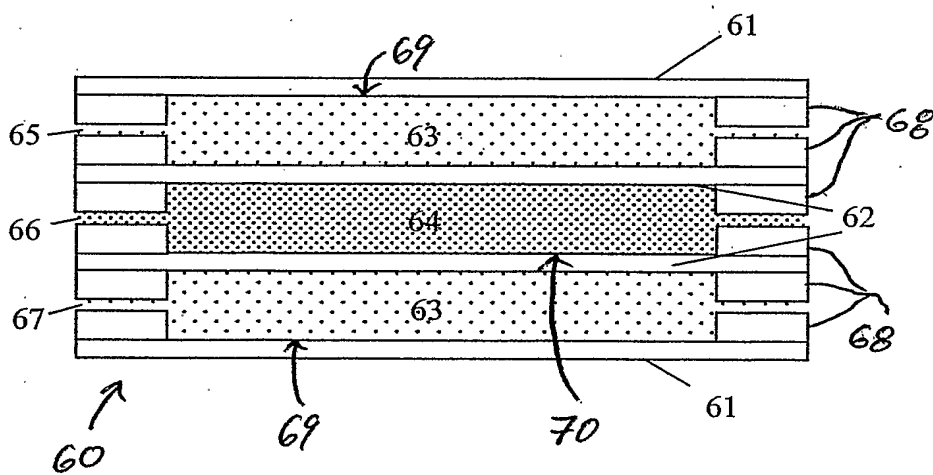


Fig. 4b

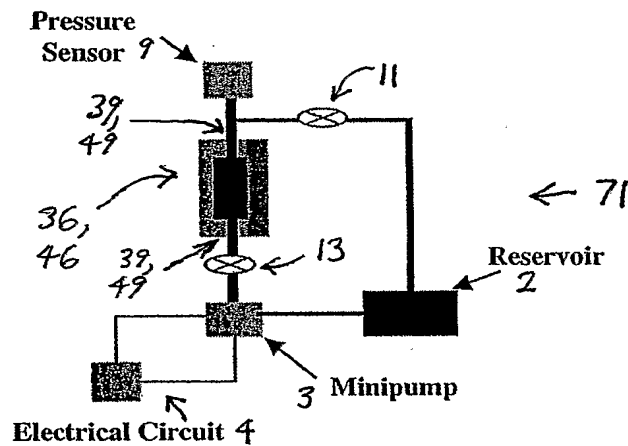
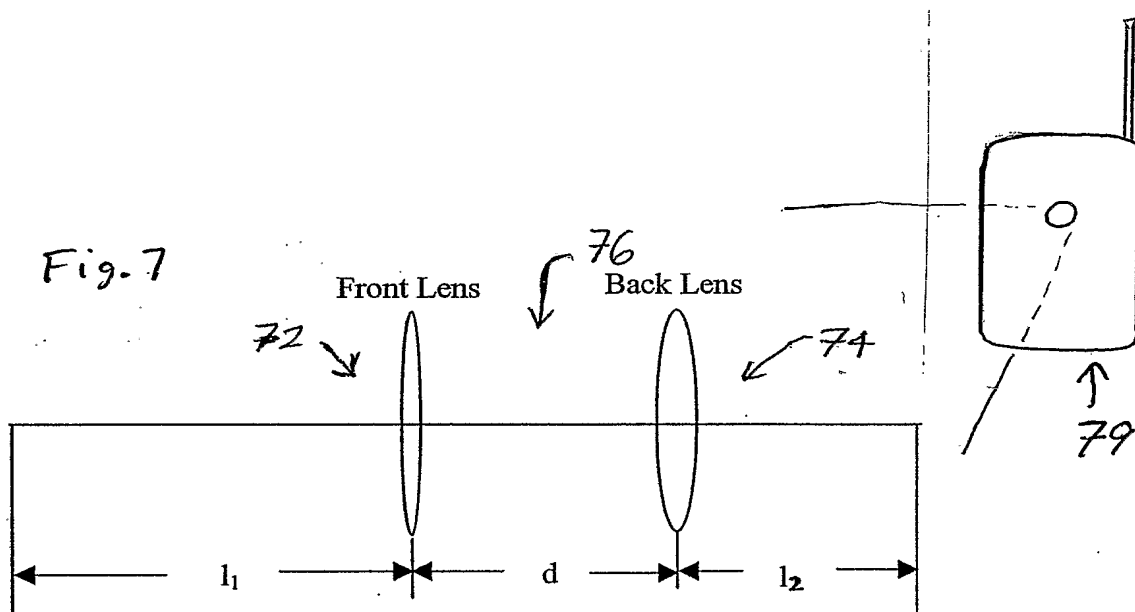
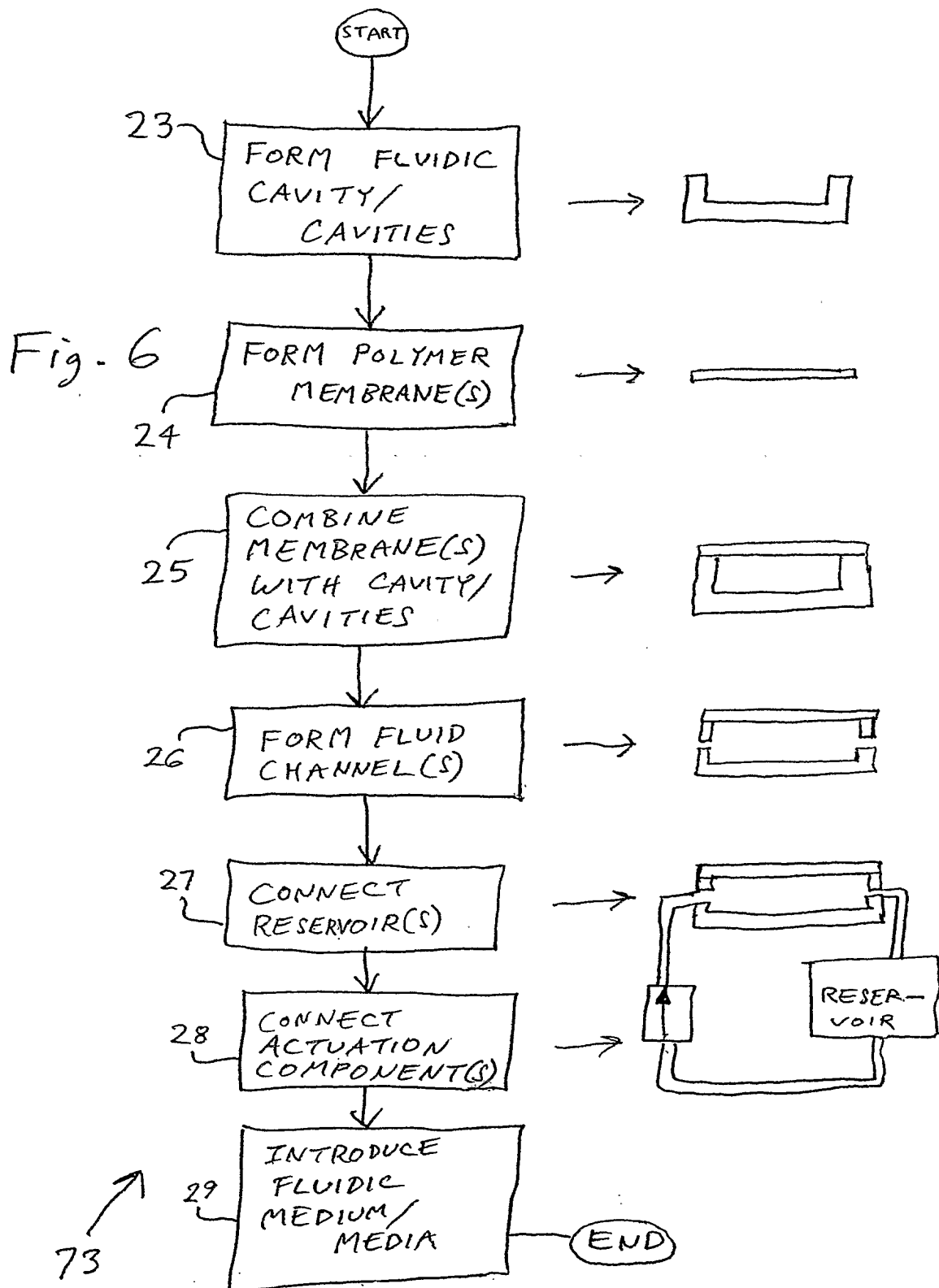


Fig. 5



$l_1$ : object distance,  
 $l_2$ : image plane distance,  
 $d$ : lens spacing,  
 $f_1$ : focal distance of the front (object side) lens,  
 $f_2$ : focal distance of the back (image side) lens,  
 $\Phi_1 = 1/f_1$ ,  
 $\Phi_2 = 1/f_2$ ,  
 $\Phi_z = 1/f$ : power of the zoom lens system,  
 ZR (zoom ratio)



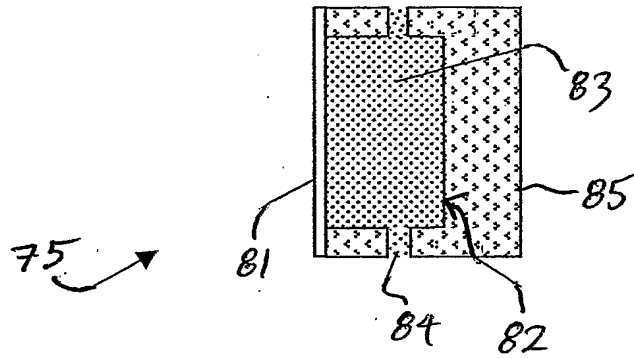


Fig. 8

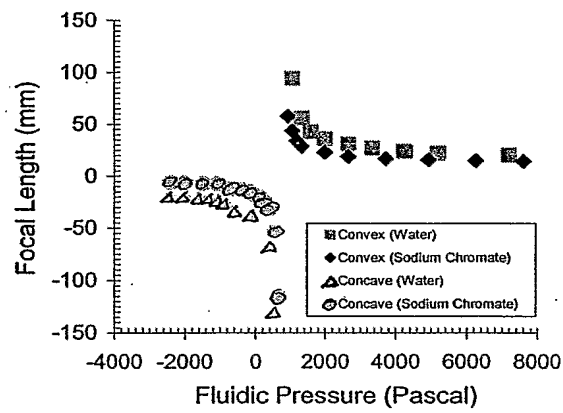


Fig. 9

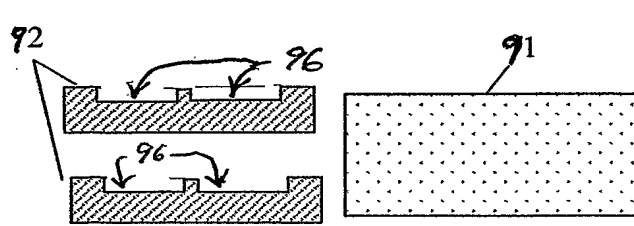


Fig. 10a

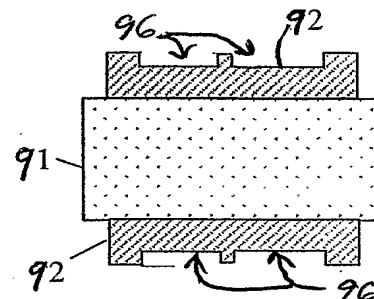


Fig. 10b

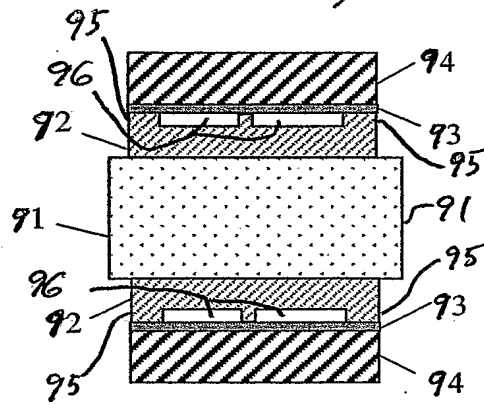


Fig. 10c

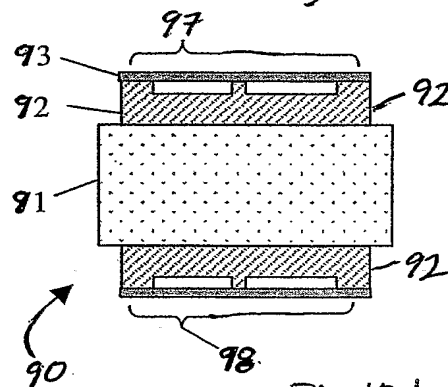


Fig. 10d

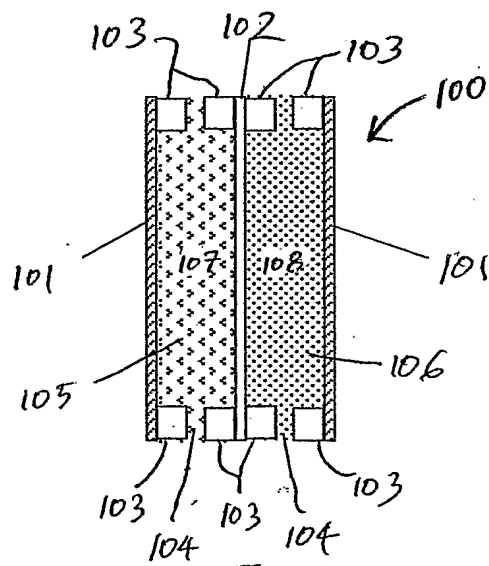


Fig. 11

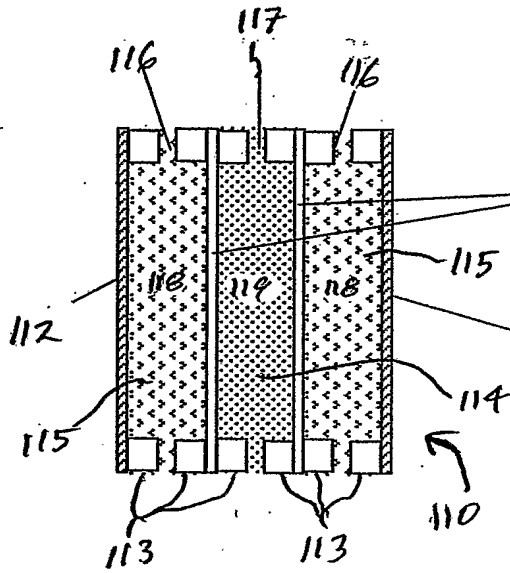


Fig. 12a

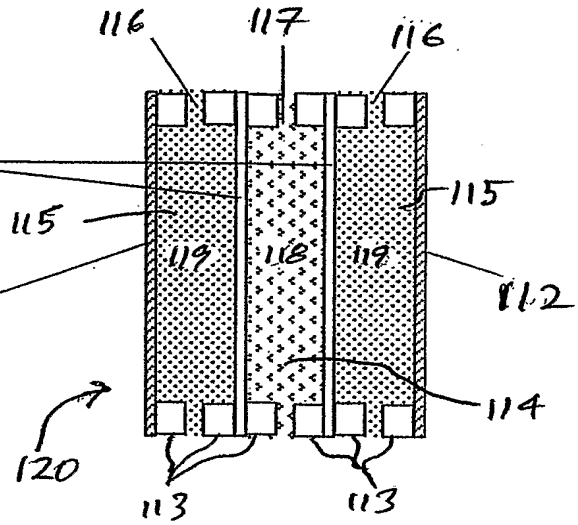


Fig. 12b

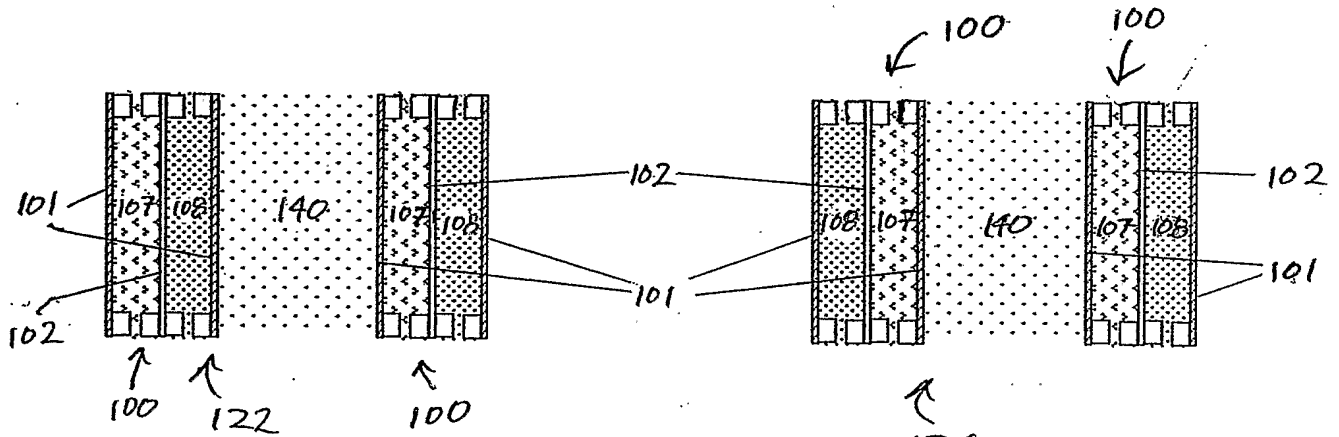


Fig. 13a

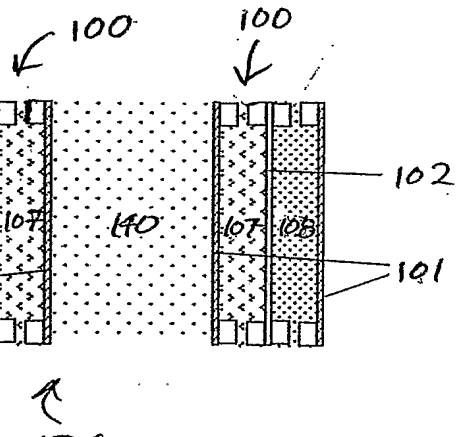
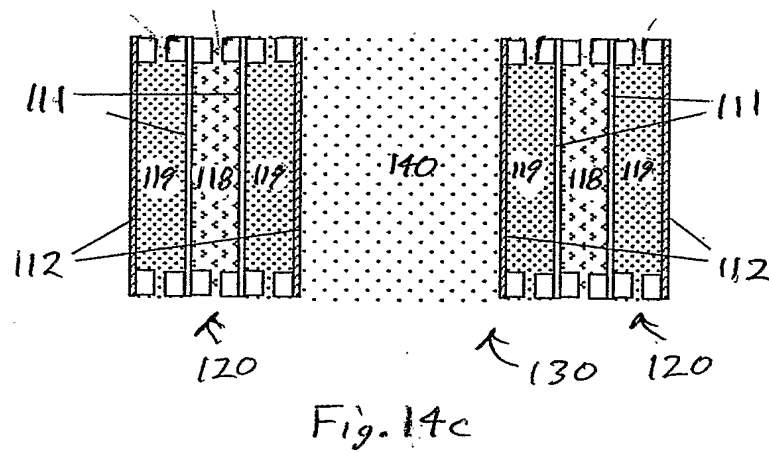
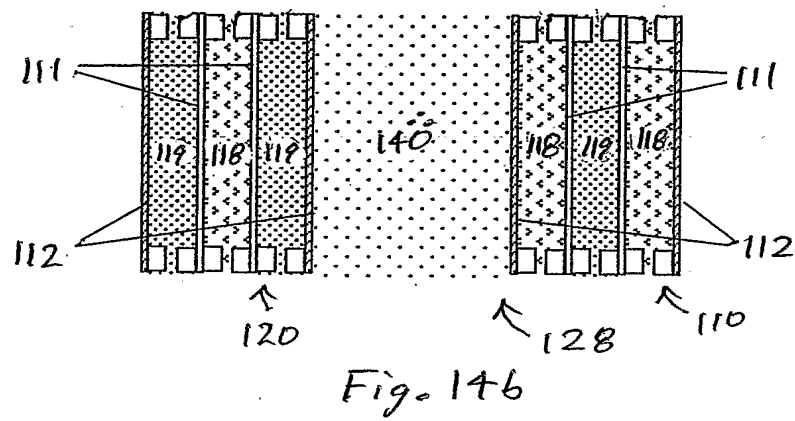
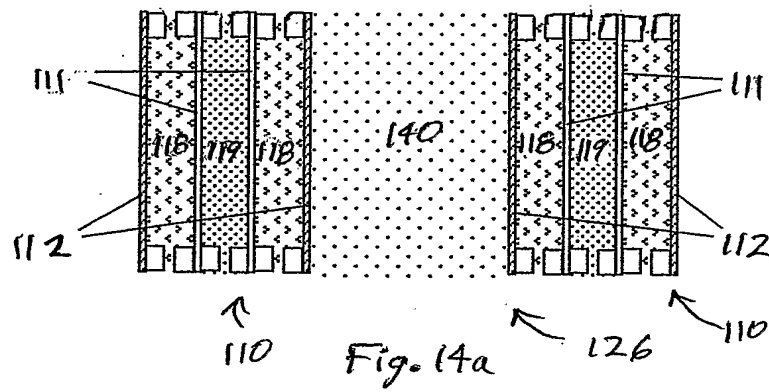


Fig. 13b



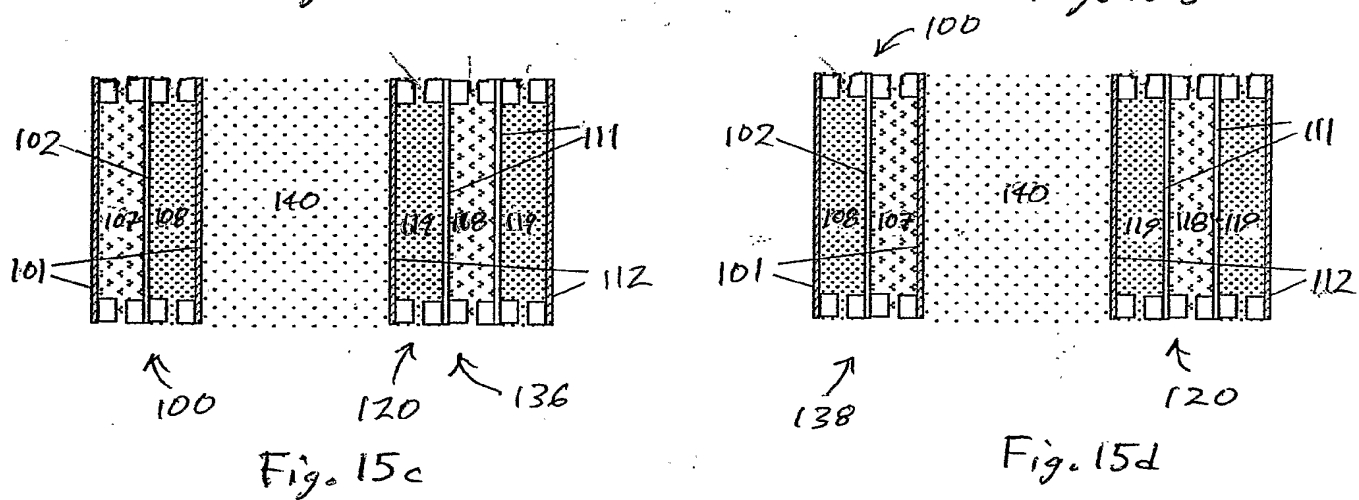
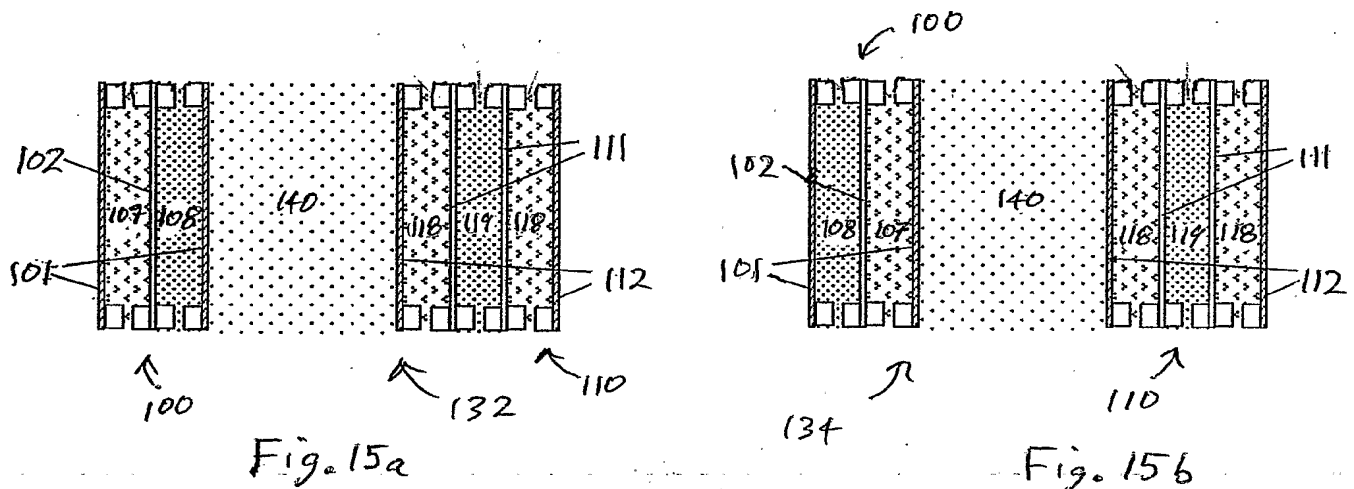


Fig. 16

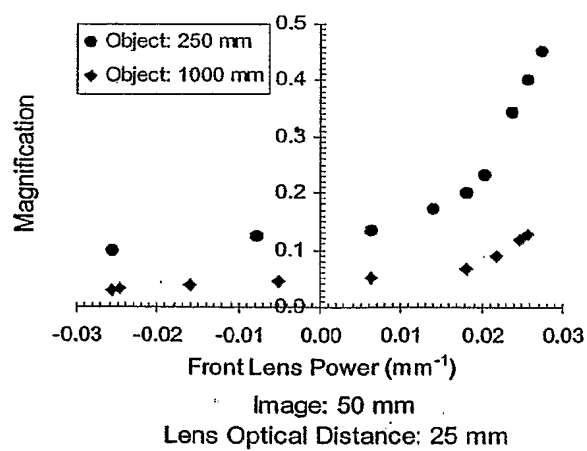


Fig. 17

